

All Pending Claims (1-34, 38-42, and 47-54)

1. An electrical connector comprising: an insulative housing, conductive contacts within an interior of the housing, wiping surfaces on a mating end of the housing, conductive surfaces on the contacts being rearward of the wiping surfaces and offset laterally of the wiping surfaces to engage unwiped surface areas of mating contacts of another, mating connector, which mating contacts wipe against the wiping surfaces prior to engagement of the unwiped surface areas of the mating contacts with the conductive surface areas of the contacts, the wiping surfaces projecting along paths of mating insertion of the contacts, and being interposed between the contacts and a front edge of the housing.

2. An electrical connector as recited in claim 1, wherein, an insulative divider separates one of the contacts from another of the contacts of each pair of the contacts.

3. An electrical connector as recited in claim 1, further comprising: an insulative divider separating one of the contacts from another of the contacts of each pair of the contacts, at least one conductive power contact having a pair of contact fingers on opposite sides of the divider, the contact fingers having a surface area sufficiently broad to radiate heat from electrical power dissipation, and the fingers extending parallel to the contacts.

4. An electrical connector as recited in claim 1, wherein, the wiping surfaces are interposed between the contacts and a front edge of the housing, and conductive shielding encircles the housing, a front edge of the shielding being closer to the front edge of the housing than the contacts.

5. An electrical connector as recited in claim 1, wherein, front tips of the contacts are recessed from a front edge of the housing, and the wiping surfaces are interposed between the tips of the contacts and the front edge of the housing.

6. An electrical connector as recited in claim 1, wherein, the wiping surfaces cover front tips of the contacts.

7. An electrical connector as recited in claim 1, wherein, the wiping surfaces are ramps.

8. An electrical connector comprising: an insulative housing, conductive contacts within an interior of the housing, wiping surfaces on a mating end of the housing, conductive surfaces on the contacts being rearward of the wiping surfaces and offset laterally of the wiping surfaces to engage unwiped surface areas of mating contacts of another, mating connector, which mating contacts wipe against the wiping surfaces prior to engagement of the unwiped surface areas of the mating contacts with the conductive surface areas of the contacts, and the conductive surfaces being raised with respect to edge margins of the contacts received in grooves in the housing.

9. An electrical connector comprising:

an insulative housing, conductive contacts within an interior of the housing, wiping surfaces on a mating end of the housing and interposed between the contacts and a front edge of the housing, with the wiping surfaces projecting along paths of mating insertion of mating contacts of another, mating connector, conductive surfaces on the contacts being offset laterally of the wiping surfaces and being rearward of the wiping surfaces to engage said mating contacts of said another, mating connector, which mating contacts pass the wiping surfaces prior to engagement with the conductive surfaces, and a conductive shield surrounding the mating end of the housing, the wiping surfaces being closer to the shield than the contacts.

10. An electrical connector as recited in claim 9, wherein, an insulative divider separates one of the contacts from another of the contacts of each pair of the contacts.

11. An electrical connector as recited in claim 9, further comprising: an insulative divider separating one of the contacts from another of the contacts of each pair of the contacts, at least one conductive power contact having a pair of contact fingers on opposite sides of the divider, the contact fingers having a surface area sufficiently broad to radiate heat from electrical power dissipation, and the fingers extending parallel to the contacts.

12. An electrical connector as recited in claim 9, wherein, the wiping surfaces are interposed between the contacts and a front edge of the housing, and conductive shielding encircles the housing, a front edge of the shielding being closer to the front edge of the housing than the contacts.

13. An electrical connector as recited in claim 9, wherein, front tips of the contacts are recessed from a front edge of the housing, and the wiping surfaces are interposed between the tips of the contacts and the front edge of the housing.

14. An electrical connector as recited in claim 9, wherein, the wiping surfaces cover front tips of the contacts.

15. An electrical connector as recited in claim 9, wherein, the wiping surfaces are ramps.

16. An electrical connector comprising: an insulative housing, conductive contacts within an interior of the housing, wiping surfaces on a mating end of the housing, conductive surfaces on the contacts being offset laterally of the wiping surfaces and being rearward of the wiping surfaces to engage mating contacts of another, mating connector which mating contacts pass the wiping surfaces prior to engagement with the conductive surfaces, and a conductive shield surrounding the mating end of the housing, the wiping surfaces being closer to the shield than the contacts, and the conductive surfaces being raised with respect to edge margins of the contacts received in grooves in the housing.

17. An electrical connector as recited in claim 9 wherein, the conductive surfaces on each contact are between edge margins on each contact, and the wiping surfaces are offset from the conductive surface areas on the contacts, and are in alignment with the edge margins on the contacts.

18. An electrical connector as recited in claim 1 wherein, the conductive surfaces on each contact are between edge margins on each contact, and the wiping surfaces are offset from the conductive surfaces on the contacts, and are in alignment with the edge margins on the contacts.

19. (Amended) Mateable electrical connectors comprising: a first electrical connector having an insulative housing which carries signal contacts and power contacts;
each power contact having a body portion and contact fingers extending therefrom in a cantilevered and opposed relationship, the contact fingers further having resiliently deflectable bowed portions;

a second electrical connector having an insulative housing which carries mating signal contacts and mating power contacts for mating with the signal contacts and power contacts, respectively, of the first electrical connector;

the mating power contacts receiving the contact fingers of the power contacts of the first connector therein, whereby the cantilevered contact fingers deflect inwardly upon mating.

20. The mateable electrical connectors of claim 19, wherein the first power contact and the second power contact have lances to retain them in their respective insulative housing.

21. The mateable electrical connectors of claim 19, wherein the first power contact and the second power contact have a surface area sufficiently broad to radiate heat resulting from electrical power dissipation.

22. The mateable electrical connectors of claim 21, wherein the first power contact and the second power contact are of greater mass than the signal contacts in order to carry greater electrical current and thereby limit the temperature of the first power contact and the second power contact.

23. (Amended) Mateable electrical connectors comprising:

a first and a second electrical connector having mateable signal contacts and at least one first power contact mateable with at least one second power contact;

the first power contact having opposed contact fingers extending from a first body portion and the second power contact having opposed contact surfaces;

the first electrical connector having a shrouded housing portion surrounding the at least one power contact;

the second electrical connector having a housing complementary with said first electrical connector, thereby receiving the shrouded housing portion and the at least one power contact therein;

wherein the opposed contact fingers of the first power contact are received between the opposed contact surfaces of the second power contact such that the contact fingers resiliently deflect inwardly and exert pressure on the opposed contact surfaces.

24. The mateable electrical connectors of claim 23, wherein the first power contact and the second power contact have a surface area sufficiently broad to radiate heat resulting from electrical power dissipation.

25. The mateable electrical connectors of claim 24, wherein the first power contact and the second power contact have a greater mass than the signal contacts in order to carry greater electrical current and thereby limit the temperature of the first power contact and the second power contact.

26. The mateable electrical connectors of claim 23, wherein the first power contact and the second power contact have lances which retain them in the first electrical connector and second electrical connector, respectively.

27. (Amended) Mateable electrical connectors, comprising:

a first electrical connector having at least one first power contact, and at least one first signal contact; and

a second electrical connector having at least one second power contact mateable with the at least one first power contact, and at least one second signal contact mateable with the at least one first signal contact;

the at least one first power contact having a body portion with opposed contact fingers extending therefrom, thereby providing a surface area sufficiently broad to radiate heat resulting from electrical power dissipation;

the at least one second power contact having opposed contact surfaces, thereby also providing a surface area sufficiently broad to radiate heat resulting from electrical power dissipation;

wherein upon mating the first electrical connector with the second electrical connector, the contact fingers deflect inwardly upon insertion between the opposed contact surfaces, thereby exerting force against the opposed contact surfaces.

28. The mateable electrical connectors of claim 27, wherein the contact fingers have outwardly bowed portions.

29. The mateable electrical connectors of claim 27, wherein the at least one first power contact and the at least one second power contact have lances which retain them within the first electrical connector and the second electrical connector, respectively.

30. (Amended) An electrical connector comprising:
an insulative housing carrying signal contacts and power contacts,

the power contacts having opposed contact fingers which extend from a body portion in a cantilevered manner, the opposed contact fingers being inwardly deflectable upon mating within a mating power contact of a mating electrical connector,

wherein the power contacts have a surface area greater than a surface area of the signal contacts in order to effectively radiate heat resulting from electrical power dissipation.

31. The electrical connector of claim 30, wherein the contact fingers have outwardly bowed portions.

32. The electrical connector of claim 30, wherein termination portions are provided on the body portion.

33. The electrical connector of claim 30, wherein the power contacts have lances to retain the power contacts within the insulative housing.

34. The electrical connector of claim 30, wherein the power contacts have a greater mass than the signal contacts in order to more carry greater electrical current and thereby limit the temperature of the power contacts.

38. (Amended) An electrical connector assembly, comprising:

a first electrical connector comprised of an insulative housing having a front mating face with both signal contacts and power contacts positioned within the housing, the signal contacts being positioned within the housing with mating contact portions adjacent said front mating face, and said power contacts being profiled as male contacts having a contact section comprised of opposed contact arms interconnected along a side edge thereof with at least one portion extending forwardly from each of said contact arms to define contact fingers positioned adjacent said front mating face;

a second electrical connector profiled for mating with said first electrical connector, said second electrical connector including a housing complementary with said first electrical connector, and including signal and power contacts which are complementary with respective signal and power contacts of said first electrical connector, said power contacts of said second electrical connector being profiled as female contacts having contact portions profiled for overlapping engagement with said contact fingers of said first connector; and

wherein said first and second connectors each comprise a like plurality of rows and columns of contact receiving cavities having signal contacts positioned therein, said power contacts of said first and second connectors have greater mass than said signal contacts of said first and second connectors, and said power contacts of said first and second connectors are positioned in power contact receiving cavities which occupy the transverse envelope of a plurality of rows of signal contacts.

39. The electrical connector assembly of claim 38, wherein said signal and power contacts of said first and second connector further include termination sections for termination to further conductors.

40. The electrical connector assembly of claim 39, wherein said termination sections for said signal and power contacts of said first connector are profiled as printed circuit board contact sections.

41. The electrical connector of claim 40, wherein each power contact has a plurality of printed circuit board contact sections.

42. The electrical connector assembly of claim 39 wherein said termination sections for said signal and power contacts of said first connector are profiled as wire termination sections.

47. (Amended) The electrical connector assembly of claim 38, wherein said opposed contact arms of the power contacts of said first electrical connector are formed as

planar sections, substantially parallel to each other.

48. (Amended) The electrical connector assembly of claim 38, wherein said female contacts of said second electrical connector are formed as planar sections, substantially parallel to each other.

49. The electrical connector assembly of claim 38, wherein said opposed contact arms of the power contacts of said first electrical connector are formed as planar sections, substantially parallel to each other.

50. The electrical connector assembly of claim 49, wherein said female contacts of said second electrical connector are formed as planar sections, substantially parallel to each other.

51. The electrical connector assembly of claim 50, wherein said planar sections of said male power contacts and said female power contacts are connected along only a portion of their length.

52. The electrical connector assembly of claim 38, wherein said power contact fingers of said first electrical connector are resiliently deformable inwardly during mating with the power contacts of said second electrical connector.

53. The electrical connector of claim 38, wherein said signal contacts and said power contacts of both said first and second connectors are recessed within said respective housings.

54. The electrical connector of claim 53, wherein said first and second electrical connectors further include shield members which substantially enclose said respective housings.